

5535/5545 ACCELEROMETER SIGNAL CONDITIONER

Datasheet

OVERVIEW

These accelerometer signal conditioners accept signals from machine casing mounted accelerometers and produce a 4-20 mA current source output proportional to the measured variable. The detection circuit is responsive to true RMS vibration but the output may be scaled either to peak or RMS units. A green LED indicates sensor and cable integrity. In the event of sensor failure, the LED extinguishes and the output current is driven below 3.6 mA, thereby signaling a malfunction. A BNC connector gives access to the buffered input signal for local analysis. Optional features for either model include filters and galvanic isolation between input, output and power supply



5535
Buffered dynamic signal & 4-20 mA output



5545
Buffered dynamic signal, 4-20 mA output & local display



FEATURES

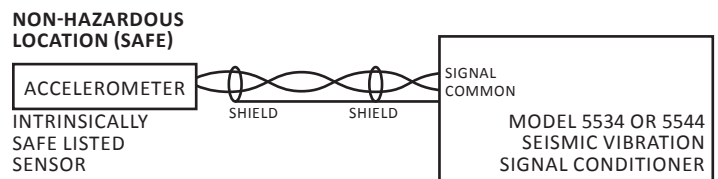
- Reduced cost alternatives to rack mount monitors
- Drives dynamic signals over long distances (300 m or 1000 ft)
- Interfaces an accelerometer to a PLC, DCS or other 4-20 mA input monitor
- Provides 4-20 mA output proportional to vibration level
- Sensor/cable input status light (green LED)
- BNC connector for FFT analyzers
- Optional indicator and/or galvanic isolation
- High, Low and Band Pass Frequency Filters for specific machine conditions

APPLICATIONS

- Gear mesh monitoring on gear boxes
- Industrial Fans
- Motors & Generators
- Process Pumps
- Centrifuges
- Natural Gas/Diesel Engines
- Gas Turbines

WIRING DIAGRAMS

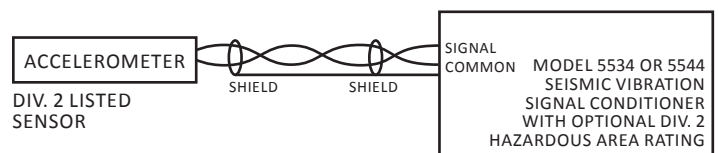
NON-HAZARDOUS LOCATION (SAFE)



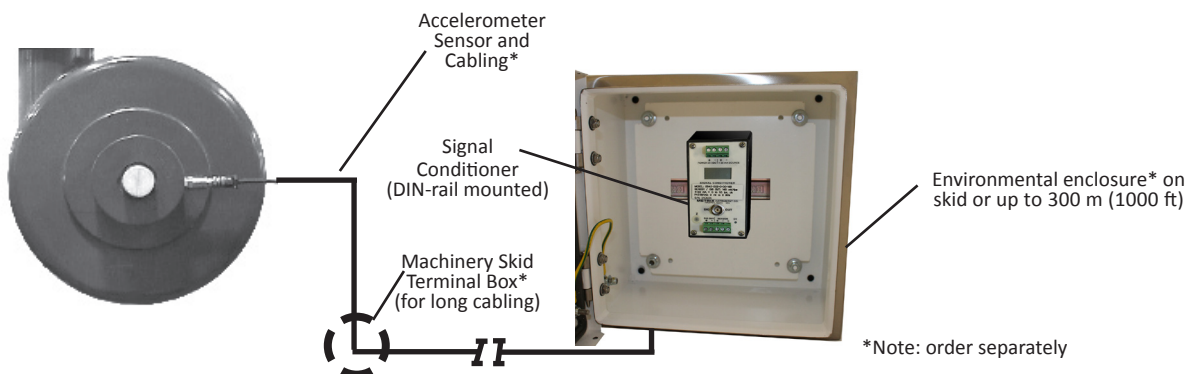
DIVISION 1 / ZONE 0 HAZARDOUS AREA



DIVISION 2 HAZARDOUS AREA



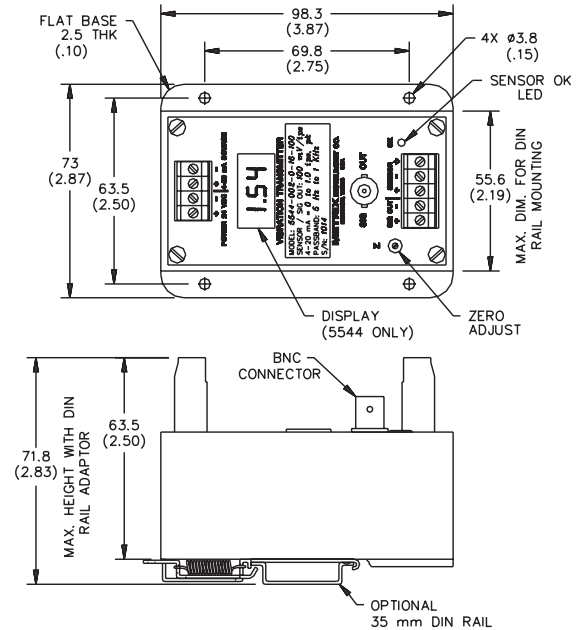
TYPICAL INSTALLATION DIAGRAM



SPECIFICATIONS

Input signal	10 to 100 mV/g
Sensor Excitation Provided	19 VDC, 4 mA constant current supplied standard; 19 VDC, 10 mA jumper selectable
Output	4-20 mA dc (source)
Vibration Range	See "Ordering Option B"
Maximum Load Resistance	600 Ω
Frequency Response	20 to 20 kHz (accel.) 2 to 2 kHz (vel.)
Sensor Malfunction	Output current driven below 3.6 mA and sensor status green LED turns off when sensor/cable not OK
Dynamic Signal Output	Buffered input signal at BNC and terminal block
Filters	Optional low-pass and high-pass filters (36 db/octave). Filter section does not affect dynamic signal. See "Ordering Option D & E"
Vibration Indicator (for Model 5545)	3-digit LCD display of vibration level in engineering units
Isolation	500 Vrms, circuit to ground. Optional 600V galvanic isolation between input, output, and power. See "Ordering Option C"
Temperature Limits	5535: -40° to +66°C (-40° to +150°F) 5545: -10° to +66°C (+14° to +150°F)
Input Power	20 to 30 VDC. Reverse polarity and electrical transient protection provided
Hazardous Area Certification	For safety certification add S for: CSA & NRTL/C Class I, Div. 2 Groups A, B, C & D
Electromagnetic Compatibility	Yes
Housing	Polymer internally coated for RFI/EMI protection.

WEIGHT & DIMENSIONS



Weight: 0.5 kg
(1.1 lb)

Dimensions in
mm [inches]

ORDERING INFORMATION

5535/5545 SIGNAL CONDITIONER SENSORS			
MODEL 55 A 5 - B B B - C - D E - F F F G			
55 □ 5 - □ □ □ - □ - □ □ - □ □ □ □			
A	LCD Digital Indicator		
3	None		
4	Built-in 3-digit LCD display		
B	Sensor Input Type/Mounting Style/Range Code		
Accel sensor (Input)	Vibration Range (4-20 mA Output)		Output Measure/ Unit System
Base Plate	DIN rail		
002	102	0 - 10 g, pk	Acceleration/ English System
032 ¹	132	0 - 10 g, rms	
007	107	0 - 50 g, pk	
037	137	0 - 50 g, rms	
005	105	0 - 1.0 ips, pk	Velocity/ English System
035	135	0 - 1.0 ips, rms	
006	106	0 - 2.0 ips, pk	
036	136	0 - 2.0 ips, rms	
202	302	0 - 100 m/s ² , pk	Acceleration/ Metric System
232	332	0 - 100 m/s ² , rms	
207	307	0 - 500 m/s ² , pk	
237	337	0 - 500 m/s ² , rms	
205	305	0 - 20 mm/s, pk	Velocity/ Metric System
235	335	0 - 20 mm/s, rms	
206	306	0 - 50 mm/s, pk	
236	336	0 - 50 mm/s, rms	

NOTES:

- Standard is D & E = 0 ; Small price adder for optional filters; D - E must be > 0 Hz; Filters affect 4-20 mA output but have no effect on dynamic output.
- Factory recommends a SA6200A sensor
- When connected and wired with approved Metrix sensor. Request Application Wiring Drawing 9031 for details.

Ordering Example: 5535-102-0-00-025

No LCD digital indicator, DIN rail with 0-10 g, pk range, no isolation, no filters, 25 mV/g sensor input, no haz. area certification.

C	Galvanic Isolation		
0	None		
1	Isolation between input, output and power		
D	High-Pass Filter ¹		
0	No filter		
1	N/A (Accel) or 5 Hz (Vel)		
2	N/A (Accel) or 10 Hz (Vel)		
3	N/A (Accel) or 20 Hz (Vel)		
4	50 Hz		
5	100 Hz		
6	200 Hz		
7	500 Hz		
8	1 kHz		
9	2 kHz		
E	Low-Pass Filter ¹		
0	No filter		
1	20 Hz		
2	50 Hz		
3	100 Hz		
4	200 Hz		
5	500 Hz		
6	1 kHz		
7	N/A (Vel) or 2 kHz (Accel)		
8	N/A (Vel) or 5 kHz (Accel)		
9	N/A (Vel) or 10 kHz (Accel)		
F	Sensor Input in mV/ps		
0	1	0	10 mV/g
0	2	5	25 mV/g
0	5	0	50 mV/g
1	0	0	100 mV/g (see note 2)
G	Hazard Area Certification		
0	No Hazardous Area Certification		
S	CSA & NRTL/C Class 1, Grps A,B,C,D, Div. 2 ³ , CE		
T	CSA & NRTL/C Class 1, Grps A,B,C,D, Div. 2 ³		